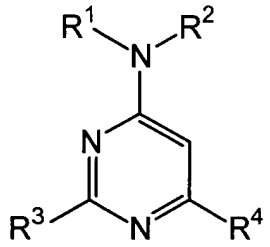
AMENDMENTS TO THE CLAIMS

Please amend claims 1, 7, and 22 as indicated below. Please add new claims 24-26. Deletions appear in ~~strikethrough font~~, and additions are underlined.

Complete listing of claims

1. (Currently amended) A compound of the formula I,



I

E1

in which

R^1 is $(C_1\text{-}C_8)$-alkyl, which can be substituted by one or more identical or different substituents chosen from hydroxyl, $(C_1\text{-}C_4)$-alkoxy, $(C_1\text{-}C_4)$-alkyl-$S(O)_m$-, R^5R^6N and aryl; $(C_3\text{-}C_9)$-cycloalkyl, which can be substituted by one or more identical or different substituents chosen from $(C_1\text{-}C_4)$-alkyl, hydroxyl and amino; or a radical of a 5-membered to 7-membered saturated heterocyclic ring with one or two identical or different hetero ring members chosen from O, NR^7 and $S(O)_m$ and that can be substituted by one or more identical or different substituents chosen from $(C_1\text{-}C_4)$-alkyl and aryl-$(C_1\text{-}C_4)$-alkyl-; and

R^2 is hydrogen, $(C_1\text{-}C_8)$-alkyl, which can be substituted by one or more identical or different substituents chosen from hydroxyl, $(C_1\text{-}C_4)$-alkoxy, $(C_1\text{-}C_4)$-alkyl-$S(O)_m$-, R^5R^6N and aryl; $(C_3\text{-}C_9)$-cycloalkyl, which can be substituted

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by one or more identical or different substituents chosen from (C_1-C_4)-alkyl, hydroxyl and amino; or the radical of a 5-membered to 7-membered saturated heterocyclic ring with one or two identical or different hetero ring members chosen from O, NR^7 and $S(O)_m$ and that can be substituted by one or more identical or different substituents chosen from (C_1-C_4)-alkyl and aryl-(C_1-C_4)-alkyl-; or

R^1R^2N is a radical, bonded via a ring nitrogen atom, of a 5-membered to 7-membered saturated heterocyclic ring optionally with, in addition to the nitrogen atom carrying the radicals R^1 and R^2, a further hetero ring member chosen from O, NR^7 and $S(O)_m$ and that can be substituted by one or more identical or different substituents chosen from (C_1-C_4)-alkyl, hydroxyl, (C_1-C_4)-alkoxy, R^8R^9N, hydroxycarbonyl, (C_1-C_4)-alkoxycarbonyl and R^8R^9N-CO-;

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R^3 is phenyl, which can be substituted by one or more identical or different substituents chosen from halogen, (C_1-C_4)-alkyl, phenyl, CF_3, NO_2, OH, -O-(C_1-C_4)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_4)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_4)-alkyl, N((C_1-C_4)-alkyl)$_2$, -NH-CHO, -NH-CO-(C_1-C_4)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_4)-alkyl, -CO-N((C_1-C_4)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_4)-alkyl, -CHO and –CO-(C_1-C_4)-alkyl;

R^4 is (C_2-C_5)-alkyl, trifluoromethyl or phenyl, which can be substituted by one or more identical or different substituents chosen from halogen, (C_1-C_4)-alkyl, phenyl, CF_3, NO_2, OH, -O-(C_1-C_4)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_4)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_4)-alkyl, N((C_1-C_4)-alkyl$_2$, -NH-CHO, -NH-CO-(C_1-C_4)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_4)-alkyl, -CO-N((C_1-C_4)-alkyl$_2$, -CO-OH, -CO-O-(C_1-C_4)- alkyl, -CHO and –CO-(C_1-C_4)-alkyl;

R^5 and R^6 are identical or different radicals chosen from hydrogen and (C_1-C_4)-alkyl; or the group R^5R^6N is a radical, bonded via a ring nitrogen atom, of a 5-membered to 7-membered saturated or unsaturated heterocyclic ring

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optionally with, in addition to the nitrogen atom carrying the radicals R^5 and R^6, a further hetero ring member chosen from an oxygen atom, a group $S(O)_m$ and a nitrogen atom and that can carry on ring carbon atoms one or more identical or different substituents chosen from $(C_1$-$C_4)$-alkyl, hydroxyl and amino and that can carry on a ring nitrogen atom a radical R^7;

R^7 is hydrogen, $(C_1$-$C_4)$-alkyl, aryl-$(C_1$-$C_4)$-alkyl-, hydroxy-$(C_1$-$C_4)$-alkyl, hydroxycarbonyl-$(C_1$-$C_4)$-alkyl-, $((C_1$-$C_4)$-alkoxycarbonyl)-$(C_1$-$C_4)$-alkyl, R^8R^9N-CO-$(C_1$-$C_4)$-alkyl-, R^{10}-SO_2- or aryl; where R^7, if this group is present on a piperazino radical representing R^1R^2N, cannot be carbocyclic aryl or carbocyclic aryl-$(C^1$-$C^4)$-alkyl;

E1

R^8 and R^9 are identical or different radicals chosen from hydrogen and $(C_1$-$C_4)$-alkyl;

R^{10} is $(C_1$-$C_4)$-alkyl, aryl or R^8R^9N;

aryl is phenyl, naphthyl or heteroaryl, all of which can be substituted by one or more identical or different substituents chosen from halogen, $(C_1$-$C_4)$-alkyl, phenyl, CF_3, NO2, OH, -O-$(C_1$-$C_4)$-alkyl, O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_4)$-alkyl, $(C_1$-$C_2)$-alkylenedioxy, NH_2, -NH-$(C_1$-$C_4)$-alkyl, -N$((C_1$-$C_4)$-alkyl$_2$, -NH-CHO, -NH-CO-$(C_1$-$C_4)$-alkyl, -CN, CO-NH_2, -CO-NH-$(C_1$-$C_4)$-alkyl, -CO-N$((C_1$-$C_4)$-alkyl$_2$, -CO-OH, -CO-O-$(C_1$-$C_4)$-alkyl, -CHO and –CO-$(C_1$-$C_4)$-alkyl;

heteroaryl is the radical of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, each of which with one or ~~more~~ **two** identical or different ring heteroatoms chosen from N, O and S;

m is 0, 1 or 2;

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or a stereoisomeric form of a compound of formula I,

or a mixture of stereoisomeric forms of compounds of formula I in all ratios,

or a physiologically tolerable salt of a compound of formula I,

or a physiologically tolerable salt of a stereoisomeric form of a compound of formula I;

compounds of the formula I being excluded in which, simultaneously, R^4 is ethyl, tert-butyl, or trifluoromethyl; R^3 is phenyl, which can be substituted by one or two identical or different substituents chosen from halogen, OH, -O-R^{11} and CF_3, R^1R^2N is R^{11} -NH-, $(R^{11})_2N$- or $R^{12}R^{13}N$-$(CH_2)_p$-NH-; p is 2 or 3; R^{11} is saturated unsubstituted $(C_1$-$C_4)$-alkyl; and R^{12} and R^{13} are identical or different radicals chosen from hydrogen and R^{11} or the group $R^{12}R^{13}N$ is a radical, bonded via a ring nitrogen atom, of a 5-membered or 6-membered saturated heterocyclic ring optionally with, in addition to the nitrogen atom carrying the radicals R^{12} and R^{13}, a further hetero ring member chosen from an oxygen atom, a sulfur atom and a nitrogen atom and that can be substituted by an aryl substituted by one or two identical or different substituents chosen from halogen, OH, -O-R^{11}, and CF_3.

E1

2. (Previously presented) A compound of claim 1, in which

R^1 is $(C_1$-$C_8)$-alkyl, which can be substituted by one or more identical or different substituents, chosen from, hydroxyl, $(C_1$-$C_4)$-alkoxy, $(C_1$-$C_4)$-alkyl-$S(O)_m$-, R^5R^6N and aryl; or is $(C_3$-$C_9)$-cycloalkyl, which can be substituted by one or more identical or different substituents chosen from $(C_1$-$C_4)$-alkyl, hydroxyl and amino; and

R^2 is hydrogen, $(C_1$-$C_8)$-alkyl, which can be substituted by one or more identical or different substituents chosen from hydroxyl, $(C_1$-$C_4)$-alkoxy, $(C_1$-$C_4)$-alkyl-$S(O)_m$-, R^5R^6N and aryl; or is $(C_3$-$C_9)$-cycloalkyl, which can be

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substituted by one or more identical or different substituents chosen from $(C_1$-$C_4)$-alkyl, hydroxyl and amino; or

R^1R^2N is a radical, bonded via a ring nitrogen atom of a 5-membered, 6-membered or 7-membered saturated heterocyclic ring optionally with, in addition to the nitrogen atom carrying the radicals R^1 and R^2, a further hetero ring member chosen from an oxygen atom, a group $S(O)_m$ and a nitrogen atom carrying a radical R^7 and that can be substituted by one or more identical or different substituents chosen from $(C_1$-$C_4)$-alkyl, hydroxyl, $(C_1$-$C_4)$-alkoxy, R^8R^9N, hydroxycarbonyl, $(C_1$-$C_4)$-alkoxycarbonyl and R^8R^9N-CO.

3. (Previously presented) A compound of claim 1, in which R^1 is $(C_1$-$C_4)$-alkyl, which can be substituted by one or more identical or different substituents chosen from hydroxyl, $(C_1$-$C_4)$-alkoxy, $(C_1$-$C_4)$-alkyl-$S(O)_m$-, R^5R^6N and aryl, or $(C_3$-$C_9)$-cycloalkyl, which can be substituted by one or more identical or different substituents chosen from $(C_1$-$C_4)$-alkyl, hydroxyl and amino, and R^2 is hydrogen; or R^1 and R^2 are identical or different $(C_1$-$C_4)$-alkyl, which can be substituted by one or more identical or different substituents chosen from hydroxyl, $(C_1$-$C_4)$-alkoxy, $(C_1$-$C_4)$-alkyl-$S(O)_m$-, R^5R^6N and aryl.

E1

4. (Previously presented) A compound of claim 1, in which R^1 is $(C_3$-$C_9)$-cycloalkyl, which can be substituted by one or more identical or different substituents chosen from $(C_1$-$C_4)$-alkyl, hydroxyl and amino, and R^2 is hydrogen.

5. (Previously presented) A compound of claim 1, in which R^1R^2N- is an unsubstituted or substituted radical chosen from piperidino, morpholino and thiomorpholino (and its S-oxide and S,S-dioxide) and piperazino.

6. (Previously presented) A compound of claim 1, in which R^3 is substituted phenyl.

7. (Currently amended) A compound of ~~the formula I as claimed in~~ claim 1, in which R^4 is $(C_3$-$C_4)$-alkyl.

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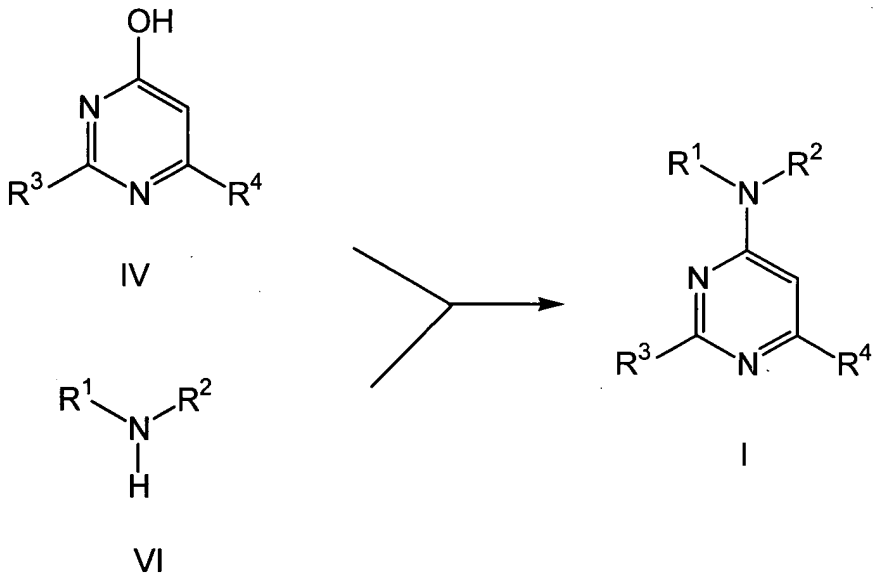
8. (Previously presented) A process for the preparation of at least one compound of claim 1, which comprises activating a 4-hydroxypyrimidine of the formula IV and then reacting it with an amine of a formula VI to produce a compound of formula I,



and optionally converting a compound of formula I into a pharmaceutically acceptable salt.

Claims 9 and 10 (Cancelled)

11. (Withdrawn) A method for activating soluble guanylate cyclase, comprising administering to a patient in need thereof at least one compound of claim 1.

12. (Withdrawn) A method of treating a medical condition, comprising administering to a patient in need thereof an effective amount of at least one compound of claim 1, wherein the medical condition is chosen from at least one of cardiovascular disorders, endothelial dysfunction, diastolic dysfunction, atherosclerosis, high blood pressure, angina pectoris, thromboses, restenoses, myocardial infarct, strokes, cardiac insufficiency, pulmonary hypertension, erectile dysfunction, bronchial asthma, chronic renal insufficiency, diabetes, liver cirrhosis, and improving restricted learning capacity or memory power.

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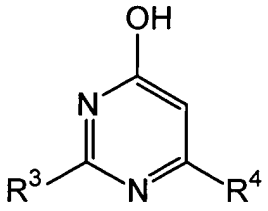
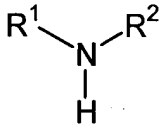
13. (Previously presented) A compound of claim 5, in which R^3 is substituted phenyl.

14. (Previously presented) A compound of claim 5, in which R^4 is $(C_3$-$C_4)$-alkyl.

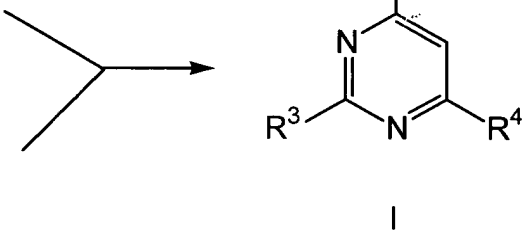
15. (Previously presented) A process for the preparation of at least one compound of claim 5, which comprises activating a 4-hydroxypyrimidine of the formula IV and then reacting it with an amine of a formula VI;



IV



VI



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and optionally converting the resulting product into a pharmaceutically acceptable salt.

Claims 16 and 17 (Cancelled)

18. (Withdrawn) A method for activating soluble guanylate cyclase, comprising administering to a patient in need thereof at least one compound of claim 5.

19. (Withdrawn) A method of treating a medical condition, comprising administering to a patient in need thereof an effective amount of at least one compound of claim 5, wherein the medical condition is chosen from cardiovascular disorders, endothelial dysfunction, diastolic dysfunction, atherosclerosis, high blood pressure, angina pectoris, thromboses, restenoses, myocardial infarct, strokes,

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cardiac insufficiency, pulmonary hypertension, erectile dysfunction, bronchial asthma, chronic renal insufficiency, diabetes, liver cirrhosis, and improving restricted learning capacity or memory power.

20. (Previously presented) A pharmaceutical composition, comprising one or more compounds of claim 1 and a pharmaceutically acceptable carrier.

21. (Previously presented) A pharmaceutical composition, comprising one or more compounds of claim 5 and a pharmaceutically acceptable carrier.

22. (Withdrawn and currently amended) A method of treating a cardiovascular disorder associated with low cGMP levels, or a disorder for whose therapy or prophylaxis an increase in the cGMP levels is desired, comprising administering to a patient in need thereof an effective amount of at least one compound of formula I,

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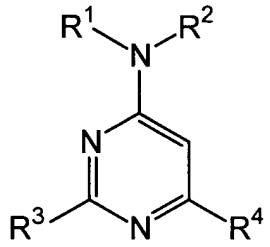

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in which

R^1 is $(C_1\text{-}C_8)$-alkyl, which can be substituted by one or more identical or different substituents chosen from hydroxyl, $(C_1\text{-}C_4)$-alkoxy, $(C_1\text{-}C_4)$-alkyl-$S(O)_m$-, R^5R^6N and aryl; $(C_3\text{-}C_9)$-cycloalkyl, which can be substituted by one or more identical or different substituents chosen from $(C_1\text{-}C_4)$-alkyl, hydroxyl and amino; or a radical of a 5-membered to 7-membered saturated heterocyclic ring with one or two identical or different hetero ring members chosen from O, NR^7 and $S(O)_m$ and that can be substituted by one or

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more identical or different substituents chosen from (C_1-C_4)-alkyl and aryl-(C_1-C_4)-alkyl-; and

R^2 is hydrogen, (C_1-C_8)-alkyl, which can be substituted by one or more identical or different substituents chosen from hydroxyl, (C_1-C_4)-alkoxy, (C_1-C_4)-alkyl-$S(O)_m$-, R^5R^6N and aryl; (C_3-C_9)-cycloalkyl, which can be substituted by one or more identical or different substituents chosen from (C_1-C_4)-alkyl, hydroxyl and amino; or the radical of a 5-membered to 7-membered saturated heterocyclic ring with one or two identical or different hetero ring members chosen from O, NR^7 and $S(O)_m$ and that can be substituted by one or more identical or different substituents chosen from (C_1-C_4)-alkyl and aryl-(C_1-C_4)-alkyl-; or

E1

R^1R^2N is a radical, bonded via a ring nitrogen atom, of a 5-membered to 7-membered saturated heterocyclic ring optionally with, in addition to the nitrogen atom carrying the radicals R^1 and R^2, a further hetero ring member chosen from O, NR^7 and $S(O)_m$ and that can be substituted by one or more identical or different substituents chosen from (C_1-C_4)-alkyl, hydroxyl, (C_1-C_4)-alkoxy, R^8R^9N, hydroxycarbonyl, (C_1-C_4)-alkoxycarbonyl and R^8R^9N-CO-;

R^3 is phenyl, which can be substituted by one or more identical or different substituents chosen from halogen, (C_1-C_4)-alkyl, phenyl, CF_3, NO_2, OH, -O-(C_1-C_4)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_4)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_4)-alkyl, N((C_1-C_4)-alkyl)$_2$, -NH-CHO, -NH-CO-(C_1-C_4)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_4)-alkyl, -CO-N((C_1-C_4)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_4)-alkyl, -CHO and –CO-(C_1-C_4)-alkyl;

R^4 is (C_2-C_5)-alkyl, trifluoromethyl or phenyl, which can be substituted by one or more identical or different substituents chosen from halogen, (C_1-C_4)-alkyl, phenyl, CF_3, NO_2, OH, -O-(C_1-C_4)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_4)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_4)-alkyl, N((C_1-C_4)-alkyl$_2$, -NH-CHO,

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-NH-CO-(C_1-C_4)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_4)-alkyl, -CO-N((C_1-C_4)-alkyl$_2$, -CO-OH, -CO-O-(C_1-C_4)- alkyl, -CHO and –CO-(C_1-C_4)-alkyl;

R^5 and R^6 are identical or different radicals chosen from hydrogen and (C_1-C_4)-alkyl; or the group R^5R^6N is a radical, bonded via a ring nitrogen atom, of a 5-membered to 7-membered saturated or unsaturated heterocyclic ring optionally with, in addition to the nitrogen atom carrying the radicals R^5 and R^6, a further hetero ring member chosen from an oxygen atom, a group $S(O)_m$ and a nitrogen atom and that can carry on ring carbon atoms one or more identical or different substituents chosen from (C_1-C_4)-alkyl, hydroxyl and amino and that can carry on a ring nitrogen atom a radical R^7;

E1

R^7 is hydrogen, (C_1-C_4)-alkyl, aryl-(C_1-C_4)-alkyl-, hydroxy-(C_1-C_4)-alkyl, hydroxycarbonyl-(C_1-C_4)-alkyl-, ((C_1-C_4)-alkoxycarbonyl)-(C_1-C_4)-alkyl, R^8R^9N-CO-(C_1-C_4)-alkyl-, R^{10}-SO_2- or aryl; where R^7, if this group is present on a piperazino radical representing R^1R^2N, cannot be carbocyclic aryl or carbocyclic aryl-(C^1-C^4)-alkyl;

R^8 and R^9 are identical or different radicals chosen from hydrogen and (C_1-C_4)-alkyl;

R^{10} is (C_1-C_4)-alkyl, aryl or R^8R^9N;

aryl is phenyl, naphthyl or heteroaryl, all of which can be substituted by one or more identical or different substituents chosen from halogen, (C_1-C_4)-alkyl, phenyl, CF_3, NO2, OH, -O-(C_1-C_4)-alkyl, O-(C_2-C_4)-alkyl-O-(C_1-C_4)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_4)-alkyl, -N((C_1-C_4)-alkyl$_2$, -NH-CHO, -NH-CO-(C_1-C_4)-alkyl, -CN, CO-NH_2, -CO-NH-(C_1-C_4)-alkyl, -CO-N((C_1-C_4)-alkyl$_2$, -CO-OH, -CO-O-(C_1-C_4)-alkyl, -CHO and –CO-(C_1-C_4)-alkyl;

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heteroaryl is the radical of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, each of which with one or ~~more~~ two identical or different ring heteroatoms chosen from N, O and S;

m is 0, 1 or 2;

or a stereoisomeric form of a compound of formula I,

or a mixture of stereoisomeric forms of compounds of formula I in all ratios,

or a physiologically tolerable salt of a compound of formula I,

or a physiologically tolerable salt of a stereoisomeric form of a compound of formula I.

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23. (Withdrawn) A method according to claim 22, wherein the cardiovascular disorder is chosen from endothelial dysfunction, diastolic dysfunction, arteriosclerosis, high blood pressure, angina pectoris, thromboses, restenoses, myocardial infarct, strokes, cardiac insufficiency, and pulmonary hypertension.

24. (New) A method according to claim 12, wherein the cardiovascular disorder is angina pectoris.

25. (New) A method according to claim 19, wherein the cardiovascular disorder is angina pectoris.

26. (New) A method according to claim 23, wherein the cardiovascular disorder is angina pectoris.

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